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ABSTRACT

A study focused on developmentally delayed children who participated in a home-based, parent intervention motor development program. The major question considered was: Is there any difference in gross and fine motor mean scores obtained on the Peabody Developmental Motor Scales (field test edition), received by children who participated in the program and those who did not. Twenty children with a mean chronological age of 5.8 years, classified as being developmentally delayed, were the target population. Subjects were randomly and evenly divided into an experimental group and comparison group, and then pretested on the scales to determine gross and fine motor developmental ages. The 8-week program was administered by the subjects' parents or guardians and was based on a series of developmental activities accompanying the Peabody Scales, designed to teach each skill included in the scales. The program was monitored and adjusted bi-weekly by examiner home-visits. Analysis of data revealed that gross motor scores of the experimental group improved significantly over gross motor scores of the comparison group, while fine motor scores of both groups showed significant improvement (JD)

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THE EFFECTS OF A HOME-BASED, PARENT INTERVENTION MOTOR DEVELOPMENT PROGRAM ON DEVELOPMENTALLY DELAYED CHILDREN

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RATIONALE

In the highly specialized field of adapted physical education, an increasing number of special education schools and institutions have moved toward a multidisciplinary approach to teaching motor skills. The multidisciplinary approach involves the coordination and cooperation of a number of professionals including physical educators, physical therapists, occupational therapists, and therapeutic recreation personnel. For an adapted physical education program to be truly multidisciplinary it must utilize the parents or guardians of handicapped children. Only recently have parents become involved and then, on a limited basis.

Federal legislation has recognized the importance of parents in determining the educational program for their children. P.L. 94-142, the Education for All Handicapped Children Act, requires an individualized education plan (IEP) be written for each handicapped child, with specific reference made to physical education programming. Parental approval must be granted before this program is implemented. Too often the parents of handicapped children are confused and may not possess the professional expertise or basic knowledge to make specific judgements on individual programming. The parents are forced to rely upon judgements of various teachers involved with their children. This may certainly be the case in physical education where concepts such as laterality, directionality, sensorimotor integration, and kinesthetic sense may be foreign to parents.

The legislation mandating adapted physical education has lead to great gains within the field including the development of professional programs of developmental movement and sensory stimulation. Too often, however, parents are not instructed how to most effectively provide motor development activities and sensory stimulation for their children in an informal home atmosphere. As a result, gains achieved in these programs could likely be maintained and improved by the utilization of parents in home-based programs.

Professionals within special education have invoked the parent approach and have capitalized on the benefits. Traditionally, studies involving parent intervention programs have focused on self-help skills, language and speech development, cognitive development, and social-emotional growth. Adapted physical educators have been slow to realize the potential of parental involvement and at best, have instituted programs randomly with little or no research to substantiate benefits. The need to determine the effectiveness of involving parents in motor programs is great. This study is one approach which addressed this need.

Gray and Wandersman (1980) list three ways in which the development of children and the relationships with their families can be enhanced through home-based programs: (a) home-based programs if started at an early enough age can set patterns of interactions; (b) parent-child relationships are established and continue beyond the treatment phase; and (c) home-based programs can work with each family individually, catering to specific needs. Since parents know their children better than anyone else, and in most cases they spend more time with their children than anyone else, it would follow that the parents are perhaps their childrens' best teachers. Too often, however, parents simply do not know how to help their children (Steer & Browne, 1978).

Purpose

A review of the literature found studies exploring home-based, parent intervention motor development programs for developmentally delayed children are not well represented. Most motor development programs reviewed are almost always conducted in clinical settings with little or no involvement from parents. The purpose of this study was to determine if parents of developmentally delayed children could significantly improve the gross and fine motor skills of their children utilizing developmental activities accompanying the Peabody Developmental Motor Scales (field test edition).

Subjects

Children who had been classified in a public school setting as being developmentally delayed were the target population for this study. A single school was chosen as the site for this investigation due to the fact it served only children who were identified as developmentally delayed. Additionally, the school provided no professional perceptual-motor or physical education training for their students. Limiting the entire sample to this school insured that any change in motor skill abilities was due to the parent program and not factors relating to a school-based motor development program.

Only those subjects whose parents indicated a willingness to participate in the home program were selected. Subjects were randomly assigned from this group to an experimental group ($N=10$) and comparison group ($N=10$). The children examined were between the ages of 4.6 and 6.6 years, with a mean chronological age of 5.8 years.

Test Instrument

The Peabody Developmental Motor Scales (field test edition) was used as the instrument for evaluation. It is a highly specific and sequential motor test designed to assess indices of gross and fine motor skills occurring in children between birth and 7 years of age. The scales allow the examiner to obtain knowledge concerning the skills the children have mastered, those they are currently developing, and those not in their repertoire.

The scales are accompanied by a program of activities designed to teach each skill included in the scales. These activities allowed the examiner to precisely recommend an individualized motor program which was easily followed by parents. The recommended program included activities to fill developmental gaps, to strengthen emerging skills, and to set objectives for skills not obtained. The scales are designed to evaluate the childrens' motor skills in relation to adaptive capacities. Thus items were selected which required the children to use their motor capacities to adapt to specific situations. The large number of items included in the scales provided a greater opportunity for children to demonstrate their abilities and for the examiner to program effectively.

METHODS AND PROCEDURES

Phase I: Pretest

Data was collected on a pretest-posttest basis. At the beginning of this study, both experimental and comparison groups were given the gross and fine motor sections of the Peabody Developmental Motor Scales (field

test edition). Groups of two to three children were tested simultaneously, by the same examiner, for ease in administration and to ease anxiety and tension common to test situations.

Phase II: Treatment

The experimental group participated in a home-based, parent intervention, sequential motor development program. The program was based on a series of developmental activities accompanying the scales. As a result of pretesting, each child's developmental level and program was clearly determined. Once the child's program was established by the examiner, it became the parent's responsibility to implement the programmed activities and record progress after each session. Monitoring of the program by the examiner included biweekly visits to each child's home. The initial visit included an explanation of the Peabody Scales, recording procedures and results of the individual child's pretest results. Subsequent visits included adjustment of individual programs based on parent progress reports. Activities were either maintained or added as needed. These informal visits allowed for discussior concerning the program and each child's progress. Parents questions concerning aspects of motor development were answered as well. Gross motor activities centered around eye-hand coordination tasks such as throwing objects at targets, fundamental movements of running, hopping, jumping, etc., balancing and general coordination skills. Fine motor tasks included sorting, cutting, tracing and stacking.

Length of Program

Each motor development session implemented by the parents was designed to last between 20 and 40 minutes. This length of time was determined when considering the home environment and variables of fatigue, retention of

learned material, motivation, and the span of time in which an instructor can be effective. For the purpose of this study parents were required to provide three to five sessions per week for a total of 8 weeks.

Phase III: Posttest

Following the 8 week treatment, posttesting procedures for the experimental and comparison groups followed the same pattern as pretesting procedures.

RESULTS

Results stemming from an analysis of data revealed: (a) the mean gross motor developmental ages of the experimental group increased significantly during the training period while there was no improvement in comparison group scores, and (b) the mean fine motor developmental ages of the experimental and comparison groups increased significantly during the training period.

DISCUSSION

A review of literature reports conclusively that gross motor functioning could be improved in handicapped children through developmental programs of physical activities (Chavez, 1970; Corder, 1966; & Oliver, 1958). The findings of this study in regard to gross motor attributes are not surprising. It was not known however, what affect parents would have on the motor development of their children when charged with the full responsibility. Cratty (1973) feels parents of handicapped children differ along several dimensions relative to their feelings about, and interactions with their offspring. For example, in terms of acceptance, (a) some parents accept the handicapping condition intellectually and emotionally; (b) some

intellectually acknowledge the problem, but emotionally do not accept it; and (c) some reject the possibility that something is wrong. It is not uncommon for these parents to overprotect their children in loving or unloving ways. The pressure of parenting a handicapped child can break a family apart or draw it closer together. The more a family knows and understands about a particular handicapping condition, and participates in remediating activities, the better they are able to cope with the situation.

A concern during the study was that these parents would expect too much, too soon, and become frustrated. Parents who set unreasonable expectations for their children often become disappointed when they fail. According to Arnheim and Sinclair (1979), parental disappointment does not go undetected by sensitive children. Knowing they have displeased their parents or they do not achieve at the level expected, children may become anxious or tense. It was necessary to take this factor into consideration in the monitoring of the program. Activities had to be chosen which were not only challenging for the children, but provided for a great chance of success. Parents were encouraged to discuss their initial expectations and these were modified as needed. The Peabody Developmental Motor Scales was an ideal instrument for use since the tasks are broken into various components for rapid learning. As long as parents stayed within the outlined boundaries, the chance for frustration was minimal.

The fact that the experimental group who participated in the home motor program significantly improved their gross motor functioning while the comparison group did not, lends support to the theory that parents can significantly improve the motor functioning of their handicapped children. The mean gross motor improvement within the experimental group was 4.86 months with a range of improvement from 1.9 to 9 months.

The findings concerning fine motor acquisition are somewhat different than the results of gross motor acquisition. It was found the experimental and comparison groups significantly improved fine motor functioning. The mean gain for the experimental group was larger however. This can best be explained by the nature of the school. This particular public school is concerned primarily with developing readiness skills for kindergarten. Activities within the school are social in nature in addition to an emphasis on fine motor skills. The significant improvement by the comparison group was not surprising. It was interesting, however, that the experimental group improved to a greater degree while receiving additional tutoring within the home.

Summary

The results of this study support the theory that gross motor functioning of handicapped children can be improved by developmental parent intervention programs. It should be noted this is not to be considered a substitute for physical education or motor development programs staffed by professionals. Enthusiastic and well-meaning parents should be guided by trained personnel in implementing motor development programs, as many parents are not aware of the various stages of motor development and may initiate activities which would otherwise be contraindicated. Parent intervention programs are to be used in conjunction and cooperation with physical education programs and staff. Parents who have increased their knowledge of physical education programming and practices can provide substantial input during IEP meetings. In times of budget problems, parents who have a stake in physical education programs, who are involved in them, and who value them, will be less willing

to lose these programs. Parents who do not see the worth of such programs will vote for elimination.

Active participation by family members in early education programs may well have an effect on the education programs the handicapped child will encounter later, where typically the involvement of family members has been passive or even discouraged. The generation of parents experiencing active participation in the early education programs may not be content in the future with such passive involvement. Their active participation in the many aspects of education may bring about a basic change in our total educational system. Gray and Wandersman (1980) stated some of the most powerful components of early intervention with young children have been parent involvement and parent education through regular home visiting. The home is a most powerful place to start.

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